

# Russian Research Reactor Fuel Return Program

[www.inl.gov](http://www.inl.gov)

A worker holds a glass jar of highly-enriched uranium pellets removed from a Romanian research reactor.



When the war was cold, the fuel was hot. Hot as in radioactive. During the 1950s, both the U.S. and Russia provided highly-enriched uranium (HEU) fuel to countries around the world. The fuel powered research reactors for experiments in medicine, physics, and energy.

Today, the use of HEU fuel for research reactors is being replaced by proliferation-resistant low-enriched uranium. And since 2002, an international team of nonproliferation experts has been working to locate and repatriate stockpiles of HEU fuel. Three members of the team work for Idaho National Laboratory.

During the Cold War, both the U.S. and the former Soviet Union ran programs to encourage peaceful nuclear research through the exchange of nuclear fuels. But when the Soviet Union collapsed in 1991, the countries that had received Russian fuel were left without a process for returning it. Most were unable to provide secure long-term storage for the fuel, and it became a national security risk for the U.S.

In response, the National Nuclear Security Administration (NNSA) established the Russian Research Reactor Fuel Return Program to reduce this global threat. Members of the team eliminate stockpiles of highly enriched uranium by managing the packaging, transportation, and return of HEU fuel from the original receiving country to Russia. Once there, the fuel is permanently converted into safe low-enriched uranium.

The multiyear initiative is both complex and sensitive. Experts from NNSA, the International Atomic Energy Agency (IAEA), the Department of State, Russia, and the host nation are involved during the process.

## Quick Facts

- The Russian Research Reactor Fuel Return Program transports Russian-origin highly enriched uranium from research reactors in 14 countries to the Russian Federation.
- A series of well coordinated steps by many international parties ensures the fuel is safely and securely shipped to Russia for down blending and reprocessing.
- As of June 2012, more than 1,700 kilograms (more than 65 nuclear weapons) of HEU fresh and spent fuel has been returned to Russia.
- To date, fuel has been removed from Bulgaria, the Czech Republic, Germany, Hungary, Kazakhstan, Latvia, Libya, Poland, Romania, Serbia, Uzbekistan, Belarus, Ukraine, and Vietnam.
- As a result of the RRRFR Program, Latvia, Bulgaria, Romania, Libya, Ukraine, and Serbia now have no remaining HEU.

## For More Information

*Ken Allen*  
(208) 526-9441  
[ken.allen@inl.gov](mailto:ken.allen@inl.gov)

